

CLAIMS:

1. An apparatus for rehydrating and for performing electrophoresis on a gel strip including:-
- 5 (a) a tray defining at least one trough configured to receive a gel strip, said trough defining a centrally located rehydration area and an electrode area disposed either side of the rehydration area;
- (b) means for delimiting the rehydration area of the trough from the electrode area; and
- 10 (c) electrode means including contact points adapted to contact either the gel strip in the electrode areas near the first and second end of the gel strip or a conducting or current carrying electrode bridge material which is in contact with the gel strip in the electrode areas, the electrode means being adapted to be connected to a means for supplying an electric current for imposing an electric potential in the strip between the electrodes.
- 15 2. An apparatus as claimed in any preceding claim wherein the means for delimiting the rehydration area of the trough from the electrode area include walls extending laterally across the width of the trough and an air gap defined between each electrode means and the wall adjacent said electrode means.
- 20 3. An apparatus as claimed in any preceding claim wherein two spaced apart parallel walls extend across the trough defining a gap there between
4. An apparatus as claimed in claim 2 or 3 wherein a part of the gel strip in the rehydration area of the trough adjacent the delimiting wall contacts a conducting/current carrying, electrode bridge.
- 25 5. An apparatus as claimed in claim 4 wherein the electrode bridges comprise an absorbent material wetted with an electrically conducting liquid.
6. An apparatus as claimed in claim 5 wherein the absorbent material is paper.
- 30 7. An apparatus as claimed in any preceding claim wherein the electrode area is deeper than the rehydration area.
8. An apparatus as claimed in any preceding claim wherein a laterally extending channel is defined in a floor of the groove.
- 35 9. An apparatus as claimed in any preceding claim wherein the trough does not include embedded electrodes and the electrodes contact the electrode bridge material from above.

40070514 000000

10. An apparatus as claimed in any one of claims 1 to 8 wherein the tray includes a dry IPG gel strip and dry electrode bridge material located in place in the trough.

11. An apparatus as claimed in any preceding claim further including pressure applying means which rest on the gel strip where the strip overlaps the electrode bridge material to ensure a good electrical contact between the gel strip and the electrode bridge material.

12. An apparatus as claimed in any preceding claim wherein the tray defines a plurality of substantially parallel troughs.

13. A method of rehydrating and performing electrophoresis on a gel strip using the apparatus according to the any of the preceding claims.

14. A method of rehydrating and performing electrophoresis on a gel strip comprising the steps of:

(a) providing a tray defining at least one trough with a gel strip, located in said trough, the trough defining a centrally located rehydration area and an electrode area disposed either side of the electrode area in which an absorbent electrode bridge is provided, the trough including means for delimiting the rehydration area of the trough from the electrode area;

(b) wetting the bridges with an electrically conducting liquid;

(c) adding rehydration liquid, containing a sample to be separated by electrophoresis into the centrally located rehydration area of the trough;

(d) inserting a dry gel strip into the trough if a gel strip is not already present in the trough, the gel strip being longer than the rehydration area so that its ends rest on the electrode bridges;

(e) applying relatively low voltage across the gel strip the during a first period in which rehydration of the gel strip occurs;

(f) subsequently applying a relatively higher voltage to perform electrophoresis on the sample.

15. The method of claim 14 wherein the sample is a mixture of macromolecules selected from the group consisting of protein samples containing DNA, RNA, amino acids or other components which can be separated by electrophoresis may be used.